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Enrolling local strategic actors in public portal development

Abstract The focus of this paper is on seemingly mundane but essential aspects of network formation between actors in E-government contexts. It is based on a qualitative case study of portal development in public healthcare. The theoretical framework applied is Actor-Network Theory (ANT). The research question is: What factors contribute to the enrolment of strategic local actors in technology development in E-government? It was found that seemingly simple but basic functionalities like e.g. information about illnesses, rights, healthcare providers as well as personal e-services were of strategic importance for enrolling local actors to the process and to the portal, serving as a kind of “enrolment devices.” The reason is their capacity to provide useful functionality and communicate usefulness. Due to the complexity of the environment, local support based on perceived and future usefulness as well as long-term project organization safeguarding future development were seen as critical success factors.

Keywords: Portal, development, healthcare, Actor Network Theory, enrolment

1 Introduction

The development of E-government systems is complex since it involves many actors and rationalities. The issue of successful network formation among involved actors is therefore of particular interest from a practical as well as a research point of view [2, 12, 14, 23, 30]. The present paper uses a qualitative case study of national healthcare portal development as a basis for investigating issues about success and failure in network formation in the complex political context of E-government. The focus is on a project where a national Swedish public healthcare portal is developed and how the different county councils are enrolled to the development process as well as to the portal itself. Thus, this is a process case study of technology development in an E-government context [36]. The case study context involves the development of a national healthcare portal in a Western country dominated by public healthcare and with high Internet access. It is, as annotated above, complex but in a representative way: The main actors are made up by semi-autonomous government agencies (“county councils”) but there are also public national authorities and other organizations in place. A precondition for success of this national healthcare portal development project is therefore not only that citizens will start to use it. A necessary precondition for this to happen is that strategic local actors in form of the county

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councils that run the healthcare in the country are enrolled to the project as well as to the portal itself.

Due to the fact that development processes in the context of E-government involves many actors and rationalities, there is a need for a theoretical framework that takes care of this. According to a pivotal article [14] Actor-Network Theory (ANT) is an excellent framework for understanding the politics of E-government project trajectories. Stakeholder analysis has been suggested as an alternative framework considering the diversity of actors and interests [29]. However, the focus of the present study is not on the appearance of different interests *per se*. Instead, the focus is on the concrete actions and views of actors in development that precede enrolment [4] to this process by a certain group of strategic local actors (county councils in public healthcare). Therefore the present study contributes to E-government studies using ANT [14, 26, 30, 33 and others]. The research question is: *What factors contribute to the enrolment of strategic local actors in technology development in E-government?*

2 Previous Studies

If we look into the few E-government studies using ANT, as well as related studies of technology development in healthcare using ANT, the following account appears: [31] apply the concept of symmetry in ANT when studying the use of technology in boarder control. They conclude that there are several problems that are very similar for people (humans) and goods (technology) so that practitioners and researchers can learn a lot from such analysis in processes of innovation. In [14] it is suggested that an ANT analysis of processes during which public sector systems come about is an excellent way of understanding project trajectories and network formation including a distinction between global and local actors. These authors see the emergent power play of actors as a central tenet of such processes in order to capture their final results in terms of success or failure. In a similar vein, [23] focuses on global and local actors finding the later's interests much weaker inscribed and represented than the formers. The organizational consequences of an online analytic processing tool in a municipal environment is studied by [16]. Their study focuses on the successive enrolment of diverse groups of actors within the organization as well as to modifications of their perceptions of the system. [26] makes an ANT analysis of actors and objectives when a Decision Support System was used by citizens in pension reform as a part of an attempt to influence their behavior. Lastly, [1, 12] propose the use of ANT in a described E-government case context but draw on it in a very limited way.

Last but not least, [6] study contextual dynamics in health information systems in public healthcare focusing on the dynamics concerning elements of content and context. In doing so they tested a particular methodological approach of focusing, structuring and presenting the case study based on process events. With an exception of [31], all these studies focus on wide-ranging development processes and network formation of actors in E-government. However, none of the later goes deeper into the particularities of the enrolment of one (strategic) group of actors, albeit *not* the single dominating key actor [13], and the empirical as well as analytical details of this. This

is hoped to be a relevant approach when investigating factors contributing to the enrolment of strategic local actors in a process of technology development in E-government. Thus, in a similar manner as [6], the present study will pursue and test a particular approach in ANT application.

3 Theoretical framework

The theoretical approach of the present study is built on ANT and the sociology of translation and the concepts of problematisation, interessement and, enrolment [4]. ANT is a continuously developing theory that emerged via seminal texts like [4] but there have been relatively recent contributors such as [5] and [8]. The present paper benefits from this framework by applying certain concepts to a process in a specific field of praxis (the processes during which an E-government system comes about). We now proceed to a standard, minimalistic account of these concepts:

The classic ANT study, involving scallops, fishermen and the researchers in St. Brieu Bay, France, Callon offers a simple but telling account that introduces important concepts [4]. The study describes how one type of actor (the researchers) attempts to enrol or align other actors (scallops and fishermen) with their own objectives; i.e., to get the scallops to act in a manner consistent with the activities designed by the researchers for growing scallops, and as part of this, for the scallops to remain on a rope used for these activities. The rope, as such, serves as an *enrolment device* in this attempt. *Problematisation* is the first phase of this process. Here, certain actors place themselves as indispensable resources in the solution of the problem they have defined; other central actors' roles are also defined in a more general way. Thus, by doing so the initiators or leading/key actors identify themselves, in terms of ANT, as an *obligatory passage point* that all actors have to pass through for solving the identified problem.

Interessement follows, during which the initiators attempt to convince other actors that the previously defined ideas are in line with their own interests. The concept of *interessement* etymologically is related to the notion of being in between (inter-esse), to be interposed. This means that the identity of actors might be defined in other competitive ways, says Callon. But by building devices, which can be placed between the involved actors and all others who want to define their identities, leading/key actors work to interest them for the proposed solution. This phase consists of trials of strength whose outcome will determine the solidity of the previously defined solution. Incentives are also created for actors so that should be willing to offer support. 'Interessement is the group of actions by which an entity attempts to impose and stabilize the identity of other actors [...]. Different devices are used to implement these actions' [4, pp. 207–208]. Put simply, the devices might be different types of artefacts, such as ropes, keys, etc., but also IT.

The next phase is *enrolment* accomplishing actual alliances of actors to the proposed solution. [19, 4] suggest that enrolment is accomplished by successfully persuading another actor to follow or act in accordance with your own intentions. Interestingly, in this particular case described by [4], the scallops refused to act in the proposed manner. This means that the attempts to enrol the scallops to the aspired

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objectives failed. In conclusion, 'Interessement achieves enrolment if it is successful. To describe enrolment is thus to describe the group of multilateral negotiations, trials of strength and tricks that accompany the interessements and enable them to succeed' [4, p. 211]. The concepts of problematisation, interessement and enrolment will be applied to the context studied here. Lastly, *mobilisation* means stabilizing the network gaining full acceptance for the proposed (technological or otherwise) solution. However, since our case study was pursued between November 2008-February 2009 involving technology to be introduced in the late autumn of 2010, this phase of the framework has been judged as less relevant.

4 Method

This is an interpretive single case study [18] based on the theoretical framework of ANT. The chosen research approach is further motivated by the intention to remedy the lack of empirically rich process studies in E-government research [33]. These things imply that a rich qualitative empirical material must be collected that communicates the views from the involved actors in the context of study. When conducting a case study based on ANT, researchers must carefully choose what actors to follow [4]. The most important aspect of the research strategy has been using the idea of creating a public national healthcare portal as a criterion for finding actors that are associated with this aim. In order to capture the larger network of actors the study started by one interview in March 2007 with the manager of a national public development organization Sjukvårdsrådgivningen SVR AB (Health Advice Online Ltd). From there, the researcher went backwards and forwards in time, unfolding the process by interviewing actors that previous interviewees defined as important. In all, 18 face-to-face semi-structured interviews (60-90 minutes) have been conducted. Eight interviews were carried out with representatives of the abovementioned development organization Health Advice Online Ltd that has managed much of the practical work with the portal development process. Also, interviews were conducted with officials at the Swedish Association of Local Authorities and Regions (SALAR) representing the county councils and their commissioning agency. Six representatives of two of the largest county councils (Stockholm, Västra Götaland) that are involved in the work have been interviewed. One representative of Carelink, which is a second public development organization that has been involved in these activities, was interviewed. The interviews with the broader network of actors have contained questions about activities, actors, intentions and technologies that were relevant to the aim of creating a national public healthcare portal.

In order to capture the experiences of county councils another type of interviews were conducted. During November 2008-February 2009 semi-structured telephone interviews (30-60 minutes) were conducted with 20 of the 21 comparatively recently (January 2007- December 2008) appointed project leaders in the county councils that have been assigned the task to coordinate regional activities when preparing for the connection to the national portal. An interview with one county council's project leader was booked but subsequently cancelled for technical reasons. The choice of this group of interviewees to capture the view of the councils concerning enrolment

has been judged as fair and valid due to their broad experiences from healthcare and technology implementation. These interviews have focused on the interestment phase and activities contributing to the enrolment of the county councils. The researcher has tried to capture the project leaders' views of activities related to portal development. This has been pursued by asking questions about all appearing and upcoming technological functionality of the forthcoming portal as well as local activities and opinions associated with these, meetings and other activities associated with the development process, pros and cons of the forthcoming functionality, as well as critical success factors associated with the project from their point of view. According to plans the portal was to be launched during the late autumn of 2010, which is why there were no patient users to be interviewed at the time of the study. Second, the gradually evolving ideas about the functions and purpose of the portal have also been captured by reading relevant documents. For example, the researcher has gained access to official strategies and reports written in the larger public policy process in the area of healthcare and IT, policy documents describing the functional requirements of the proposed portal, as well as strategy documents and evaluations produced by the SALAR. Third, a further source of study is technology. In the following account this has been in form of including technologies ("devices") that human actors have described as featuring in the process. Strategies, requirements documentation, as well as interviews were used as sources of data when describing these technologies. An analysis was made of the data in order to create a theoretically informed overview of the first phase of the process (Section 5.1) in general and the interestment phase preceding the enrolment of county councils focusing on activities and views (Section 5.2) in particular. In order to draw conclusions from these descriptions the main intention has been to summarize and interpret the county councils' views of what contributes to their successful enrolment to the process (Section 6).

5 Case Description

5.1 The Problematization Phase

The majority of healthcare services in Sweden are financed by public and not private means. National authorities regulate Swedish healthcare but 21 county councils run it. Independent political bodies with the right of taxation govern these regional authorities. This section offers an overview of the first phase of the portal project. It makes up what in ANT vocabulary is denominated as the problematisation phase during which prominent actors are put in place and a solution of the identified problem is established. During the 1990s there were some activities at the government level dedicated to the issue of IT infrastructure in healthcare (Ministry of Health and Social Affairs, 1991) but they never resulted in any concrete government bill. The interest among the county councils in these issues varied greatly. In 1998 a national public healthcare portal (Infomedica.se) containing information about illnesses, treatments and patient rights was launched by one regional and two national agencies

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(the SALAR and the National Pharmacy Ltd). During the coming years prominent national actors worked to create a national IT-strategy for healthcare. This resulted in the launching of an IT-strategy in March 2006 with one of its aims to develop a portal with information and services to citizens [22].

The continued work was managed by a new national commissioning agency for healthcare (National Centre for Coordinating e-Health) run by SALAR. The requirement specification for a new national healthcare portal was developed in two rounds of submissions to the county councils. The content of the final requirement specification can be described as follows [15]: (1) The first section of the portal should contain textual information about various issues: general health themes such as 'children', 'pregnancy', 'sex' and 'illnesses', with both national and regional texts, including choices and a waiting-time guarantee; treatments, with national and regional levels; drugs, with national and regional levels; and rights concerning the waiting-time guarantee, choice and patient committees. (2) There should be facilities providing online health tests and self-help therapy. (3) There should be an advanced facility for searching for healthcare providers at the regional level. (4) A national facility for comparing waiting times between county councils should be present. There should be direct connections between information about illnesses and treatments on the one hand and relevant waiting times on the other hand. (5) There should be a functionality for asking questions. (6) Lastly, the portal should contain some personal interactive e-services, such as a device for booking appointments, changing appointments, renewal of prescriptions, asking for a copy of an individual's electronic patient record, contacting a person, asking for tests and receiving the results of tests. All these functions must be protected by passwords.

In June 2007 the commissioning agency of SALAR gave a formal assignment to the development organization Health Advice Online Ltd to continue working with a national healthcare portal in a "version 0.5" and a complete 1.0 version [7]. The formulation "version 0.5" referred to a functionality called Mina Vårdkontakter ("My Health Contacts") containing personal e-services that the Stockholm County council had launched. During the spring of 2008 nearly all county councils had recruited project leaders dedicated to the issue of pursuing activities so that later on the county councils' websites might be connected to the national portal. In July 2008 the procurement process was completed and a company that would pursue the technical development work with the forthcoming portal was appointed.

5.2 The Intersement Phase

Thus, the stage was set for activities from the side of the commissioning agency of SALAR, the county councils and other actors in the intersement phase. During this phase of the process, national actors worked more directly to strengthen the development project. Previously in 2007 external consultants reviewed the project organization and content based on a request from the commissioning agency of SALAR (SALAR, 2008). An important conclusion in these reports was that, to safeguard success, the project organization should be made tighter and have a more limited but clearer scope. The importance of the perceived and expected future usefulness of the county councils when it comes to the functionality of the

forthcoming portal was also emphasized. Further, in 2008 the commissioning agency of SALAR ordered a PENG analysis dedicated to the issue of calculating the monetary value of the perceived and expected future usefulness of the portal from the point of view of the inhabitants, the providers of care and the society at large (Jerligård, 2009). This was supposed to be of use in decisions made by SALAR as well as the individual county councils in the further development and implementation process. Last but not least, in 2008 meetings were started up between the project leaders of the county councils and the development organization Health Advice Online Ltd. We will now look into important aspects of what the county councils actually did or were made to do in the process as well as their views about critical success factors in work as described by the project leaders in their development project.

Taking part in meetings. During 2008 all project leaders of the county councils, with the exception of one newcomer, had been taking part in meetings with the development organization Health Advice Online Ltd. A vast majority of the representatives described that exchange of experiences between the county councils were the most common and useful part of these meetings. This was especially so since some of them had more extensive experiences and resources than others. The meetings also treated the communication of information about organizational issues related to the national portal project as such. A vast majority of the interviewees complained about that this has been such a large part of the agenda. They also complained about the problems associated with what they described as the turbulent project organization *per se*. "It has been a turbulent organization of project work from the side of the Health Advice Online Ltd, the project leaders have been changed several times. Even though I work in the county council I have never seen such a degree of constant reorganization." (Project leader 8)

Developing new information. Since the Spring of 2007 meetings had also been held between the development organisation Health Advice Online Ltd and people working with information issues at the county council. As mentioned, the portal will contain national common information about rights as well as illnesses and treatments (no. 1 in the requirement specification in Section 5.1), but the county councils might add their own information when there are special rules that apply. According to a vast majority of the interviewees the county councils had started to work with these kinds of texts in 2008 or had a clear plan of doing so in 2009. A third of the county councils had similar plans but were a little bit unsure about whether this work will be finished in 2009 or 2010. One county council (Stockholm) had no plans but had already implemented a broad range of patient centred information.

Developing a database with providers of care. Two parts of the forthcoming portal functionality depended on the existence of a database (the "HSA-catalogue") with information of the providers of care: the devices dedicated to searching among healthcare providers (no. 3 in the requirement specification) and those providing personal e-services in form of My Health Contacts (no. 5). The county councils had worked for several years to fill this database with adequate information. A vast majority of the county councils said that they had completed or will complete the

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work with the HSA-catalogue in 2009. Four county councils had more vague plans regarding this work. One county council (Stockholm) said that they have their own database but that it can be characterized as more advanced than the common structure.

Introducing My Health Contacts. My Healthy Contacts is, as mentioned, a functionality containing personal e-services originally created by Stockholm county council. In the spring of 2007 it was defined by the commissioning agency of SALAR as part of the portal project offering a common facility for all the county councils. A vast majority of the county councils said that they would introduce this functionality in 2009 or already had done so. A couple of county councils were somewhat unsure about what they will do but the issue as such is under consideration. A few others were unsure due to the fact that they have an almost equal type of functionality offering personal e-services.

Introducing a facility for Chlamydia testing. An additional functionality of My Health Contacts was developed as a part of the national project during 2007-2008 meaning that Chlamydia tests can be ordered and checked online. Chlamydia persists among mostly young people in Sweden and there is a firm intention to increase the number of tests. Approximately a third of the county councils' project leaders said that they were planning to introduce this service. A third of the county councils were considering this but are unsure about what to do. A few county councils were already using the functionality whereas some used a functionality offering tests that is not a part of this common functionality.

View of critical success factors for enrolment. How did the representatives of the county councils define the "critical success factors" for enrolment to the portal project as such, with special reference to their own regional activities in the county councils? According to one third of the county councils, success will depend on the actual quality of information that the regional providers of care will have time to put into the system. "We talk very much about communicating usefulness to our healthcare workers, in order to get them to fill in high quality information in the HSA-catalogue." (Project leader 16) The perceived usefulness of the facilities was seen as equally important among the interviewees: "That you could actually show that this is useful for the patients in a very tangible manner, but also for healthcare that will have to work with this." (Project leader 3) The perceived usefulness of the portal functionality in form of My Health Contacts and the functionality for searching among providers of care were mentioned explicitly by one fourth. A few interviewees also mentioned that economic and organizational aspect regarding the stability of the national project as such were important for the success in their own regional activities (see section "Taking part in meetings").

6 Discussion

We have now made a theoretically enlightened account of the development process. We have seen how a large network of actors has enrolled to the *idea* of creating a

national healthcare portal and the politics associated with this (section 5.1). Some of these, first and foremost the commissioning agency of SALAR, The Ministry of Health and Social Affairs, the Health Advice Online Ltd and the appointed external developer, constitute what [14] denominated as a global actor network generating a space and resources where innovation might take place. Through the institutional build up of this network of global actors and their portal plan, serving as an *obligatory passage point*, they try to enrol local strategic actors that are those that must do the actual work introducing the portal in healthcare. In the case of Swedish healthcare, the county councils can be characterized as part of the local network “necessary to the successful production of any working device” [20, 1992, p. 22]. In [14] it is concluded that projects in public sector are part of complex environments where global actors not always have the capacity to influence local actors to do certain things. They make a difference between a “power over” as opposed to a “power to” capacity of global actors, the later referring to the actual capacity as opposed to the formal capacity of making others to follow your intentions. In the case discussed here, through the acceptance of the National IT-strategy, the county councils supported, or were enrolled to, the idea of building a portal. Further, in Section 5.2 we saw how SALAR and the development organisation Health Advice Online Ltd were working to achieve enrolment from the side of the county councils through meetings with regional representatives etcetera, but the county councils are still independent in certain areas as for example concerning the uptake of IT. Thus, the general conclusion by [14] about the varying power of global actor networks to really influence actions (“power to”) is relevant also in our case study.

What are the more general conclusions based on a closer analysis of county councils’ own activities and views (Section 5.2)? Many of the county councils have started up regional work with basic functionality planned to finish in 2009 and are taking part in meetings at a national level. In other words, despite the fact that a development process of an E-government system might take several years our case shows that local actors actually can be made to take active part in activities contributing to their enrolment. This is of importance since, as annotated above, organizational actors like county councils are in many ways independent when it comes to economic, organizational and technological issues. These activities also, in terms of ANT, are part of the negotiation and persuasion process of global key actors trying to make all the county councils active supporters of the portal not only in principle but also in practice. The case also shows that among the involved county councils as well as national actors, basic technological functionality is seen as strategic not only to the portal, but to the process at large, as well in a simple but tangible manner exposing the portal’s usefulness. This especially goes for the functionality for personal e-services denominated as My Health Contacts and the capacity for searching among providers of care and the facility for Chlamydia testing. As it is today, a few county councils have implemented some kind of personal e-services but even fewer has an advanced capacity to search among providers of care. Also, we learn that the introduced functionality must not necessarily be significantly better than some of the e-services implemented by a few of the country councils.

Our conclusion is therefore that these kinds of simple functionality is of importance to enrol partly independent actors “technically speaking” to the portal in the sense that their county council will be a part of the national portal by connecting

to it. The preparation for this also means that they are enrolled to the larger development process, supporting as well as exposing the development of current and potential technological usefulness. Using the vocabulary of ANT, the portal functionality represents concrete technological enrolment devices that serve to influence certain actors (county councils) to act according to other actors' (SALAR and Ministry of Health and Social Affairs among others) intentions to create a portal.

In line with this, the issue of usefulness has also a technical dimension related to future potential. The portal version 1.0 is made up by an infrastructure with simple but useful functionality without much interaction with local systems in healthcare. The real value of the portal might very well arrive when it supports activities like direct bookings of appointments or access to electronic health records. Therefore, to safeguard that the new portal will be useful also as a platform for future development ("version 2.0") the larger organizational aspects of continued joint development pursued at, or administered by, the national level is important.

In sum, the detected value of simple but useful functionality serving as enrolment devices and the multifaceted appearances of perceived and expected future usefulness shed light on an important aspect of enrolment of actors in E-government contexts. This shows how a simple, seemingly mundane but strategic critical success factors for the enrolment of local actors look like. Why is this so? In Information Systems research the concept of (perceived) usefulness [28] is often used in ex post facto evaluations explaining technology use [24]. In the context of E-government in general, and healthcare in particular, the concept of usefulness gets a specific strategic flavor in its capacity to work as a multifaceted motivator, if not *the* motivator, for enrolment of local actors. This is so, even though a critical position must include asking the question; usefulness, to whom and for what purpose? Despite this, the concept of usefulness seems to serve as an argument in itself in the presence of many-sided rationalities, as well as an important part of the persuasive activities in the intersement phase having the potential to convince local strategic actors ("power to") in absence of central actors' capacities ("power over") [14]. The perceived as well as expected usefulness is of course heavily related to the notion of existing, emerging and future users and situations of use. Thus, employing images and narrations of usefulness and associated users do not only feature in documents outlining technology strategies [32], but feature as important narrative enrolment devices in seemingly mundane technology development processes in E-government. However, the context of healthcare is of course even more complex due to the dominating medical rationality [11]. In current E-government discourse prominent national actors suggest that the related issue of benefit management must increasingly be taken into account before, during and after development processes [9]. Our conclusion is therefore that usefulness in its various forms seems to be both political and politically important in E-government contexts. Future research should probe into the nuances in meanings, and the further role of this concept, for enrolment. Lastly, our result shows how the enrolment process as such can be characterized as a top down event with national global actors trying to take the lead at the same time as the exposed aspects that seem to be of importance for the enrolment of the county councils show its self-organizing character.

Our focus has been on an ANT-based analysis of the politics of E-government development and the network formation in this, but with a specific attention given to

one particular type of actors and their enrolment. In this way we have been capable of studying the whole development process as such offering a view of involved actors, at the same time as having a focus on the perspective of one strategic group of local actors. Our intention has been to achieve quality in results and to avoid an excess of more general empirical detail, answering up to the critique of ANT for having a capacity to describe rather than explain [30]. This notwithstanding, our study illustrates that despite these intentions applying ANT in E-government contexts require an empirically based analysis at a general as well as a specific level to do justice to involved actors. We have illustrated the potential of variable approaches concerning the dept when treating the different stages in the process of translation [4]. However, when going deeper into certain phases like the interessement phase there is also a problem of differences concerning the stylistic aspects of descriptions. On the other hand, when exemplifying qualitative E-government process studies [33], to which the present study pertains, the majority of examples offers are more of a book character than research articles [3, 10].

References

1. Aykac, SS et al.: An Actor-Network Theory (ANT) approach to Turkish E-government gateway initiative. In: 1st International Conference on eGovernment & eGovernance (ICEGEG 2009). Ankara, Turkey (2009)
2. Ayyad, M.: Using the Actor Network Theory to interpret e-Government implementation barriers. In: ICEGOV 2009, November 10-13, Bogota, Colombia (2009)
3. Bellamy, C., Taylor, C.: *Governing in the Information Age*. Buckingham, University Press,(1998)
4. Callon, M.: Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St Brieuc Bay. In: Law, J. (ed.) *Power, Action, and Belief*, pp. 196--233, London, Routledge & Keegan Paul (1986)
5. Callon, M., Muniesa, F.: Economic Markets as Calculative Collective Devices, *Organization Studies*, 26(8), 1229—1250 (2005)
6. Cho, S., Mathiassen, L., Nilsson, A.: Contextual Dynamics During Health Information Systems Implementation: an event-based actor-network approach, *European Journal of Information Systems*, 17, 614--630 (2008)
7. Commissioning agency of SALAR: Assignment to the Development Organization. Health Advice Online Ltd [Sjukvårdsrådgivningen AB. Upphandlingsunderlag. Vården på webben]. Health Advice Online Ltd, Stockholm (2007)
8. Czarniawska, B., Hernes, T.: *Actor-Network Theory and Organizing*. Lund and Copenhagen, Liber and Copenhagen Business School (2005)
9. E-delegation: Guidance for benefit Management [Vägledning för nyttorealiserings]. Report. Stockholm, E-delegationen, (2011)
10. Fountain, J.: *Building the Virtual State: Information Technology and Institutional Change*. Washington DC, Brookings Institution Press (2001)
11. Glenton, C., Paulsen, E.: Oxman, A. Portals to Wonderland: Health Portals Lead to Confusing information about the Effects of Health Care', *Medical Informatics and Decision Making*, 5 (7) (2005)
12. Guah, M. et al. Augmenting Successful UK healthcare IS Adoption and Diffusion: an Analysis of Inherent and Emergent Organizational Structures. In: 22nd Bled eConference eEnablement, June 14-17, Bled Slovenia (2009)

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13. Hanseth, O., Jacucci, E., Grisot, M., Aanestad, M.: Reflexive Standardisation: Side Effects and Complexity in Standard Making', *MIS Quarterly*, 30, 563–581 (2006)
14. Heeks, R., Stanforth, C.: Understanding e-government Project Trajectories from an Actor-Network Perspective, *European Journal of Information Systems*, 16, 165–177 (2007)
15. Health Advice Online Ltd: Requirement Specification. Product Overview [Kravspecifikation. Produktöversikt]. Stockholm (2008)
16. Holmström, J., Robey, D.: Inscribing Organizational Change with Information Technology. In: Czarniawska, B., Hernes, T. (eds.), *Actor-network Theory and Organizing* (pp. 165-187, Lund and Copenhagen, Liber and Copenhagen Business School (2005)
17. Jerligård, E.: PENG-analysis [PENG-analys. Vården på webben januari-mars 2009]. Stockholm, SALAR (2009)
18. Klein, H., Myers, M. : A set of Principles for Conducting and Evaluating Interpretive Field Studies in Information Systems. *MIS Quarterly*, (23), 1, 67–94 (1999)
19. Latour, B., Science in Action. How to Follow Scientists and Engineers through Society. Cambridge, Massachusetts , Harvard University Press (1987)
20. Law, J. & Callon, M.: The life and Death of an Aircraft: A Network Analysis of Technical Change. In: Bijker, W., Law, J., *Shaping Technology/Building Society: Studies in Socio-technical Change* (eds.), pp. 21-52. Cambridge MA, MIT press (1992)
21. Ministry of Health and Social Affairs. Working Report from the Study of the Information Structure in Healthcare. Laws, classification and information technology. [Arbetsrapporter från Utredningen om informationsstrukturen i hälso- och sjukvården. 2. Gemensamma regler: lagstiftning, klassifikationer och informationsteknologi]. Stockholm, Ministry of Health and Social Affairs (1991)
22. Ministry of Health and Social Affairs et al.: National IT Strategy in Healthcare [Nationell IT-strategi för vård och omsorg]. Ministry of Health and Social Affairs et al. Stockholm, (2006)
23. Muganda Ochara, N.: Assessing Irreversibility of an E-Government project in Kenya: Implications for Governance', *Government Information Quarterly*, 27, 89–97, (2009)
24. Premkumar, G., Bhattacharjee, A.: Explaining Information Technology Usage: A Test of Competing Models, *Omega. International Journal of management Science*, 36, 64–75, (2008)
25. Ranerup, A.: Electronic Government as a Combination of Human and Technological Agency: Testing the Principle of Symmetry', *Information Polity*, 12 (3), 153–168 (2007)
26. Ranerup, A.: Decision Support Systems for Public Policy Implementation: The Case of Pension Reform, *Social Science Computer Review*, Winter 2008, 428–445 (2008)
27. SALAR: Following up Report 2 of the Project Healthcare on the Web [Uppföljning 2 av project Vård på webben. 18 juni 2008.] Stockholm, Commissioning agency of SALAR & Öhrlings/PriceWaterhouseCooper (2008)
28. Seddon, P.: A Respectification and Extention of the DeLone and McLean model of IS Success, *Information Systems Research*, 8(3), 240–253 (1997)
29. Skiftenes-Flak, L., Nordheim, S., Munkvold, B.: Analyzing Stakeholder Diversity in G2G Efforts: Combining Descriptive Stakeholder Theory and Dialectic Process Theory', *e-Service Journal*, 6(2), 3--23 (2007)
30. Walsham, G.: Actor-Network Theory and IS research: Current Status and Future prospects: In: *Proceedings of the IFIP TC8 WG 8.2 International Conference on Information Systems and Qualitative Research*, pp. 466–480. London: Chapman and Hall (1997)
31. Whitley, E., Rukanova, B.: A Symmetrical Analysis of the Boarder Control Information System for People and Trade. In: *ECIS 2008. Germany, University of Regensburg*, (2008)
32. Wilkie, A., Michael, M.: Expectations and Mobilisation: Enacting Future Users', *Science, Technology & Human Values*, 34, 504-522 (2009)
33. Yildiz, M.:E-government Research: Reviewing the Literature, Limitations, and Ways Forward, *Government Information Quarterly*, 24, 646–665 (2007)